Handout 4 - The Binomial Theorem and Pascal's Triangle

1. Expand $(a+b)^4$.

   $a^4+4a^3b+6a^2b^2+4ab^3+b^4$

2. Expand $(m+4n)^5$.

   $m^5+20m^4n+160m^3n^2+640m^2n^3+1280mn^4+1024n^5$

3. Expand $(5c-b^2)^4$.

   $625c^4-500c^3b^2+150c^2b^4-20cb^6+b^8$

4. Expand $(1-y^2)^6$.

   $1-6y^2+15y^4-20y^6+15y^8-6y^{10}+y^{12}$

5. Find the 6th term of $(x-y)^8$.

   $-56x^3y^5$

6. Find the 5th term of $(x-y)^8$.

   $70x^4y^4$

7. Find the 3rd term of $(x-y)^{15}$.

   $105x^{13}y^2$

8. Find the 4th term of $(x-y)^7$.

   $-35x^4y^3$

9. Find the 2nd term of $(x-y)^9$.

   $-9x^8y$

10. Find the 10th term of $(x-y)^{10}$.

    $-10xy^9$
